DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007958
Date Inspected: 27-Jul-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-2: 7/27/09
a111-2 Forging to a110-2 Base Plate
QA Inspector witnessed welder #H49, Mr. Rick Hinkle, performing FCAW “inter tacking” of various stiffeners on the PJP and fillet weld stiffeners to the a111-2 forging and a107/b106 stiffeners, in the vertical position. QA Inspector noticed QC Inspector Jose Salazar was present to monitor pre-heat temperatures and had recorded in-process welding parameters of 235 amps and 25.2 volts. QA Inspector randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit and noted that Mr. Hinkle appeared to be in compliance with the applicable welding procedure specifications (WPS 3048 & 3050).

Hinge-K Pipe Beam Assembly 102A-4: 7/27/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed that OIW production personell were resuming grinding and weld clean-up, on the PJP and fillet welds stiffeners to a111-2 forging and a107/b106 stiffeners. QA Inspector previously spoke with lead QC

Inspector Mike Gregson and Mr. Gregson explained that OIW production personell were blending the weld start/stops, removing weld spatter and repairing undersize welds in specific areas. Mr. Gregson also previously explained that once production personell were complete, OIW QC Inspector Jose Salazar will perform 100% visual examination of the PJP and fillet welds on these completed stiffeners and potentially mark up additional areas of these welds for cleaning, including excessive undercut, overlap, weld spatter, etc., in accordance with AWS D1.5. QA Inspector noted that once the visual testing is complete and acceptable, OIW QC Inspectors will be performing 100% magnetic particle testing, in accordance with AWS D1.5 and contract requirements.

Hinge-K Pipe Beam Fuse Assembly 120A-8: 7/27/09
a124-8 Half Fuse to a124-16 Half Fuse
QA Inspector randomly witnessed welder #H49, Mr. Rick Hinkle, perform backgouging, utilizing a mechanical grinder, on the completed submerged arc welding root pass, for fuse assembly 120A-8. QA Inspector noted that this weld joint was designated as a CJP AWS D1.5 B-U3c-S and assemblies were identified as piece marks a124-8/a124-16, weld joint identified as #WM3-18. QA Inspector noted that once the backgouging is complete, OIW QC Inspectors will perform 100% visual and magnetic particle testing on the weld joint.
Note: QA Inspector later spoke with QC Inspector Jose Salazar and Mr. Salazar explained that the backgouging had been completed, visual and magnetic particle testing were performed and no rejectable indications were found.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-1: 7/27/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed that the first ESW stainless steel overlay passes were 100% complete and this fuse assembly 120A-1 was sitting idle. QA Inspector noted the first layer passes were completed utilizing the 309L consumable strip and the remaining second & third layer passes would be completed utilizing Soudokay brand Soudotape 316L stainless steel consumable strip, per contract requirements. See attached picture below.

AG Machining
Hinge-K Pipe Beam Fuse Assembly 120A-3: 7/27/09
a124-12 Half Fuse to a124-10 Half Fuse
QA Inspector arrived at AG Machining, on this date and noticed that OIW had previously transferred this fuse assembly 120A-3 to AG Machining and the 1st machining cut pass was in-process. QA Inspector spoke with AG Machinist and AG explained that end result machining would continue, to a finished outside diameter measurement of 1925mm, per OIW Project Manager Bill Pender. See attached pictures below.
Note: QA Inspector noted that AG was in-process of performing “trial” machining on this fuse assembly 120A-3. After the “trial” machining is completed, this fuse assembly 120A-3 will be transferred back to OIW and OIW QC Inspectors will perform preliminary inspections on the ESW weld passes. OIW will then perform any necessary welding/grinding repairs on the overlay, prior to final machining by AG. Once accepted by OIW, this fuse assembly 120A-3 will be eventually transferred back to AG Machining and AG will machine a final outside diameter of 1920mm (+/- 1mm), per contract requirements and OIW approved drawings.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors.

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

The QA Inspector observed at AG Machining: 1 Machinist.

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer